

Chapter 1 Summary

1.1 Introduction

Wallula Generation, LLC (the applicant) is proposing to build and operate a 1,300-megawatt (MW), natural gas-fired, combustion turbine power plant and associated facilities in Walla Walla County, Washington. The applicant proposes to construct the plant on approximately 97 acres of a 175.48-acre site located about 8 miles south of the City of Pasco, in southeastern Washington. Figure S-1 presents the project site location. The Wallula Power Project would be designed to provide low cost electric energy to meet the growing needs of the Pacific Northwest and other interconnected electric transmission areas where electrical energy is needed. No customers for the power have been identified to date. The Washington State Energy Facility Site Evaluation Council (EFSEC) has jurisdiction over the evaluation of major energy facilities such as Wallula Power Project in the State of Washington and resulting recommendation to the Governor regarding approval or denial of their siting.

Proposed facilities include a 4.6-mile makeup water supply pipeline from the existing 10 Boise Cascade Corporation fiber farm water wells; a 5.9-mile natural gas pipeline interconnection to be engineered, constructed, owned, and operated by PG&E Gas Transmission-Northwest (GTN); and a permanent county access road linking the project site to Dodd Road. In addition, Bonneville Power Administration (Bonneville) has determined that reliable distribution of electricity generated by the Wallula Power Project would require construction of approximately 33.1 miles of new 500 kilovolt (kV) transmission line, construction of a new switchyard, and upgrades to the existing McNary Substation (see Figure 2-2 in Chapter 2).

1.2 Purpose and Need for the Project

1.2.1 Purpose and Need

The applicant and Bonneville have separate needs that they are proposing to meet with the proposed power plant and transmission line, respectively.

1.2.2 Power Plant Purpose and Need

Prior to the wholesale restructuring of the power industry, public authorities needed to undertake detailed energy planning to ensure the availability of adequate power supply, and to avoid construction of unnecessary energy facilities. However, in recent years industry restructuring has resulted in the development of a market-based wholesale power market in the western United States and Canada. This market is expected to encourage

the development of efficient power facilities to satisfy increasing power demands and to discourage the development of inefficient and unnecessary facilities. In this market, project developers are expected to move forward with construction of projects only when convinced demand exists for the power the facilities would produce. Project financing, likewise, depends on a demonstration of demand and economic benefit.

Recent national and regional forecasts project increasing consumption of electrical energy to continue into the foreseeable future, requiring development of new generation resources to satisfy the increasing demand.

The Western Systems Coordinating Council (WSCC) forecasts a 2.1% per year increase in peak power demand between 1999 and 2009 for the Northwest Power Pool (the states of Washington, Oregon, Idaho, and Utah; the Canadian provinces of British Columbia and Alberta; and portions of Montana, Wyoming, Nevada, and California) (WSCC 2000). The Northwest Power Planning Council predicts a 24% probability of one or more "generation insufficiency events" in the Northwest by 2003. This suggests a probability of service interruption approximately five times the currently accepted standard, and it suggests a shortfall in projected energy supply versus demand in the Northwest of between 3,000 and 6,000 MW. The Northwest Power Planning Council also concluded that some part of the needed new resources would be supplied by new generation developed in response to market forces.

In early 2001, the governor of the State of Washington issued an emergency proclamation stating that the threat to statewide energy supply could jeopardize the public health, safety, and general welfare. The governor issued an energy supply alert that directed state and local governmental agencies to minimize the injurious economic, social, and environmental consequences of the energy supply crisis. Finally, the reliance of the Northwest region on hydroelectric power generation makes it vulnerable to variations in generation capacity due to weather.

The purpose of Wallula Generation's project is to construct and operate a new generation resource that will meet a portion of existing and future energy loads in the Pacific Northwest.

1.2.3 Transmission Line Purpose and Need

Generation resources typically require interconnection with a high-voltage electrical transmission system for delivery to purchasing retail utilities. Bonneville owns and operates the Federal Columbia River Transmission System (FCRTS), comprising more than three-fourths of the high-voltage (greater than 230 kV) transmission grid in the Pacific Northwest. Bonneville operates the FCRTS, in part, to integrate and transmit "electric power from existing or additional Federal or non-Federal generating units."¹ Interconnection with the FCRTS is essential to deliver power from many generation facilities to loads both within and outside the Pacific Northwest.

¹ 16 U.S.C. 838b.

The FCRTS, as a whole, is nearing the limit of how much electricity it can carry. The system has experienced a rapid increase in use with an annual load growth rate of 4.7 % over the past five years. At the same time, there has been very little investment in expansion of the transmission line system. Many transmission paths require significant reinforcement or additional capacity through the construction of new transmission lines to accommodate new power generation.

1.3 Decisions to be Made

This document is a joint SEPA/NEPA DEIS that will meet the needs of both the Energy Facility Site Evaluation Council (EFSEC) for the State of Washington and Bonneville Power Administration (Bonneville).

EFSEC has jurisdiction over all of the evaluation and licensing steps for siting major energy facilities in the State of Washington. Once approved by the Governor of the state of Washington, EFSEC's Site Certification Agreement acts as an "umbrella" authorization that incorporates the requirements of all State laws and regulations.. Through it's review, EFSEC coordinates the comments and interests of State agencies that participate in the EFSEC review process. EFSEC will jointly issue the Final Environmental Impact Statement (FEIS) with Bonneville and make a recommendation to the governor to approve or deny the Wallula Power Project.

Bonneville will utilize the FEIS to meet National Environmental Policy Act requirements, and will prepare a Record of Decision. If the Governor of Washington approves the Wallula Power Project for construction, then Bonneville needs to decide whether and how to provide transmission service for the power project because Wallula LLC has requested (i) to integrate power from its proposed Wallula Power Project into the FCRTS at a point on the lower Monumental to McNary transmission line in T7NR32E and (ii) firm point-to-point transmission service from the Wallula Power Project to the John Day and Big Eddy substations².

Bonneville intends to base its comparison of alternatives and final decision on the following objectives or purposes:

- Provide an adequate, economical, efficient, and reliable transmission system for the Pacific Northwest;

² Bonneville has adopted the Federal Energy Regulatory Commission's (FERC) *pro forma* open access tariff as incorporated into Bonneville's Open Access Transmission Tariff. Bonneville offers transmission services, including interconnection of generation projects, in accordance with this tariff to all eligible customers on a first-come, first-served basis. Although Bonneville is not subject to FERC's jurisdiction, Bonneville follows its tariff as a matter of national policy. This course of action demonstrates Bonneville's commitment to non-discriminatory access to its transmission system and ensures that Bonneville will receive non-discriminatory access to the transmission systems of public utilities, which are subject to FERC's jurisdiction. Although Bonneville's interconnection of a generator is subject to NEPA review, Bonneville otherwise will not deny interconnection to any eligible customer that complies with Bonneville's financial and technical requirements.

- Follow Bonneville's Open Access Transmission Tariff;
- Comply with Federal environmental and energy laws and policies;
- Achieve cost and administrative efficiency;
- Minimize impacts to the natural and human environment through site selection and transmission line design.

FERC needs to decide whether GTN would construct and connect a new 5.9-mile pipeline lateral to an existing gas pipeline located southeast of the project site.

A list of permits and requirements for the project is included in Chapter 2, Table 2-4.

1.4 Description of Alternatives

1.4.1 Proposed Action

1.4.1.1 Setting

The proposed Wallula Power Project would be located in the northwestern portion of Walla Walla County, Washington, approximately 8 miles south of the City of Pasco, 2 miles north of the unincorporated community of Wallula, and 7 miles southeast of the unincorporated community of Burbank. U.S. Highway 12 borders the project site on the west, and the Union Pacific Railroad borders the site to the east. Lake Wallula (the Columbia River behind McNary Dam) is located approximately 800 feet west of the generation plant site. The project area is zoned for heavy industrial development and is surrounded by a variety of industrial businesses. The project site generally slopes westward toward the Columbia River and is characterized by gently rolling topography.

The proposed transmission line would originate at the generation plant and generally traverse east and then south, where it would connect with the proposed Smiths Harbor Switchyard. From the switchyard, the transmission line route would run southwest along the southern bank of the Columbia River to the McNary Substation. Much of the approximately 33.1-mile transmission line would follow existing transmission line corridors, traversing industrial land, agricultural croplands, undeveloped grass and shrub-steppe habitat, and federally managed lands and wildlife areas.

1.4.1.2 Wallula Power Project and Related Facilities

Generation Plant Facilities

The generation plant comprises a 1,300 MW, natural gas-fired, combined-cycle combustion gas turbine system consisting of two independent 650 MW power "blocks" with backup systems to maintain overall plant reliability and availability (see Figure 2-3 in Chapter 2). In this type of electrical generation process, natural gas would be burned

to fuel a gas turbine engine that would drive a generator to produce electrical energy. Hot exhaust gas produced by the combustion turbine would be used to boil water in a heat recovery steam generator (HRSG). Steam produced by the HRSG would turn another turbine generator to produce additional electrical energy. Exhaust steam exiting each steam turbine would be directed into a water-cooled condenser, where it would be cooled until it condensed back into water (i.e., condensate). This condensate would drain into a collection tank, then be pumped from the tank back to the two HRSGs, where it would again be used to generate steam.

Water Use and Water Rights

Water supply for the plant would be acquired from various sources, including

- a purchase option agreement with Boise Cascade Corporation under which the applicant would purchase a portion of a hybrid cottonwood fiber farm and its associated shallow groundwater rights;
- a purchase and lease option agreement with J.R. Simplot Company that would allow the purchase of conservation easements and associated water rights, and, if needed, the lease of additional agricultural lands and associated water rights; and
- the purchase of on-site well groundwater rights from the Port of Walla Walla. One well currently exists on the project site, and a second deep well would be installed to provide a backup system.

In addition, water would be stored on-site in various water storage tanks.

GTN Natural Gas Pipeline Lateral

GTN would engineer, construct, own, and operate an estimated 5.9-mile natural gas pipeline to interconnect with existing natural gas pipelines (also owned by GTN) located southeast of the proposed generation plant. Interconnection would provide firm delivery of up to 175,000 decatherms per day (Dth/day) of natural gas from Alberta, Canada, to the project site. The water and gas pipelines are illustrated in Figure 2-4 in Chapter 2.

Bonneville Electrical Transmission Line and Substation

Power generated at the Wallula Power Project would be routed from the project site to the proposed Smiths Harbor Switchyard via a 5.1-mile-long, 500 kV transmission system (the Wallula-Smiths Harbor segment). Power would then be routed via a proposed, approximately 28-mile-long transmission line from the Smiths Harbor Switchyard to the McNary Substation (the Smiths Harbor-McNary segment).

Two basic types of 500 kV steel lattice structures would be used: tangent, or light-angle, structures, and dead end structures. Approximately 25 structures would be required along the Wallula-Smiths Harbor segment, and approximately 140 structures would be required along the Smiths Harbor-McNary segment.

1.4.2 No Action Alternative

The No Action Alternative would result in no construction or operation of a 1,300 MW electric generation plant at the project site. It also would prevent the construction and operation of other related projects, including the Bonneville electrical transmission line and substation, the Smiths Harbor Switchyard, the water pipeline, and the gas lateral.

The No Action Alternative would avoid environmental impacts resulting from construction and operation of the generation plant. However, because the site is already zoned industrial, future industrial development could occur at the site. Finally, the No Action Alternative would eliminate the local benefits to Walla Walla County and nearby local communities in the form of tax revenues and opportunities for employment.

1.4.3 Alternatives Considered

Two alternatives to the proposed action are evaluated in this document.

- Bonneville is considering increasing the height of the standard transmission towers proposed along a portion of the route. This alternative design segment would potentially run from just south of Wallula Junction to about a point parallel to milepost 195 on U.S. Highway 730. This would allow for greater distances between towers, and would potentially reduce the number of structures needed, the area of land disturbed, the amount of steel used, and overall construction costs. (See Figure 2-2 in Chapter 2 for an illustration of the area where longer spans are being considered.)
- Due to the extensive development in the approach to the McNary Substation, a slightly different alignment is being considered to reduce potential route congestion issues. (See Figures 2-7 and 2-8 in Chapter 2.)

Consideration was also given to the following alternatives, which were rejected for various reasons:

- selecting an alternative generation plant location,
- building a larger or smaller generation plant,
- utilizing alternative power generation technologies (including alternative turbine-generator technologies, fuel cells and magnetohydrodynamics, coal, and nuclear, hydroelectric, geothermal, solar, and wind power),
- selecting a different cooling system design,
- selecting a different makeup water supply alternative,
- selecting alternative transmission line routes,
- selecting different site access alternatives, and
- selecting different alternative natural gas pipeline routes.

1.5 Summary of Public Involvement/Consultation/Coordination

When siting a new energy facility, EFSEC is required to hold a public information meeting in the county in which the project would be located. EFSEC and Bonneville have hosted two rounds of public and agency meetings to date. First, public open houses were held in Burbank and Walla Walla on the evenings of October 18 and 19, 2000, respectively. The intent of this round of meetings was to record community members' concerns, questions, and comments regarding the Wallula Power Project in a preapplication review process. Similarly, a meeting was held in Pasco, Washington, on the morning of October 19, 2000, to provide agencies the opportunity to offer comments. Bonneville also hosted a public meeting jointly with EFSEC in Umatilla, Oregon on June 7, 2001.

EFSEC and Bonneville co-hosted a round of agency and public EIS scoping meetings on October 2, 2001. The agency meeting was held in Pasco and the public scoping meeting was held in Burbank.

At all public scoping and agency meetings, the applicant presented a description of the project, reasons why the proposed site or location was selected, and a short summary of anticipated environmental, social, and economic impacts. EFSEC staff then described the state's siting process. At the two October 2001 meetings, the Counsel for the Environment, a Washington State Assistant Attorney General who represents the citizens of Washington State before EFSEC, also made a brief presentation.

Project documents are available to the public through EFSEC and Bonneville websites and in local and state libraries. Further opportunities for public involvement will occur throughout the remainder of the siting process. A Draft EIS public comment hearing will be scheduled during the 45-day comment period, and adjudicative hearings will be held by EFSEC prior to the issuance of the Final EIS.

1.6 Summary of Potential Impacts and Mitigation Measures

Table 1-1 summarizes potential impacts resulting from the proposed action and alternatives anticipated for each of the resource areas (earth, water, etc.). The table outlines the potential impacts that could occur during construction, operation, and maintenance of the proposed action and the alternatives.

The applicant is proposing several innovative mitigation measures to offset potential environmental impacts. For example, the applicant is proposing to purchase or lease up to 1,300 acres of active farmland and convert it to cultivated dryland grasses or dryland grasses and shrubs. Doing so would limit regional particulate (PM10) emissions resulting from windblown dust due to agricultural operations. In addition, to mitigate for potential impacts on surface water supplies, the applicant is proposing to contribute \$344,200 toward the Department of Ecology's purchase of water rights on the Walla Walla River, thus benefiting local in-stream flows.

See Appendix A for a summary of mitigation measures proposed by the applicant and Bonneville for the Wallula Power Project and transmission line.

Table 1-1. Potential Impacts of the Wallula Power Project

Impacts of Proposed Action (Construction)	Impacts of Proposed Action (Operation/Maintenance)	Impacts of Alternatives
EARTH		
<p>Construction of the proposed plant facilities, pipelines, and transmission lines would have minor impacts on geology since most excavation and grading activities would involve only near-surface geologic units.</p> <p>Increased potential for runoff and soil erosion.</p>	<p>Potential seismic hazards. (Project design and mitigation would reduce risks.)</p> <p>Slightly increased potential for erosion (erosion impacts would more likely occur during construction).</p> <p>Minimal impacts on geology, soils, topography, unique features.</p>	<p>Alternative Transmission Structure and Longer Span Design: Approx. 17 fewer transmission towers would be required and less earthwork would be needed.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts. Site could be developed in future for a different industrial project.</p>
AIR QUALITY		
<p>Emissions of fugitive dust (PM10) and exhaust gas from construction equipment and vehicles.</p> <p>Some odors resulting from paint, adhesives, materials.</p>	<p>The plant would release emissions of PM10 in a PM10 nonattainment area. To offset the production of 303 tons per year of particulates from the plant, the applicant proposes to purchase or lease up to 1,300 acres of active farmland and retire it from agricultural use.</p> <p>With the mitigation proposed, the maximum modeled concentrations of SO2, NO2, and PM10 would be below significant impact levels, as would toxic air pollutants.</p> <p>This project by itself is not expected to contribute significantly to regional haze. Cooling tower plumes would have no significant impact beyond power plant facility boundary.</p>	<p>Alternative Transmission Structure and Longer Span Design: Same as proposed action.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts. Cultivated acreage that is currently contributing to PM10 would not be retired for this project.</p>
WATER RESOURCES		
<p>Increased runoff and sedimentation impacts on local surface water.</p> <p>Increased siltation potential, especially where culverts are needed for access road crossings of streams.</p> <p>Potential spillage of contaminants into local surface water bodies.</p>	<p>Potential spills or release of contaminants used for plant operation/maintenance.</p> <p>Public water supplies would not be impacted by plant operation.</p> <p>Potential instream flow benefit to Walla Walla and Columbia Rivers because of reduction in actual water withdrawals compared to current levels.</p> <p>Groundwater pumping may exacerbate problems at the Iowa Beef Processors well.</p>	<p>Alternative Transmission Structure and Longer Span Design: Constructing approx. 17 fewer towers would result in less soil disturbance, less excess soil placement, and less road construction, thus reducing the potential for surface water degradation by sedimentation. Potential for spills or release of hazardous materials used during construction would be slightly reduced.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts. No net benefit to river flow through water rights withdrawals.</p>

Impacts of Proposed Action (Construction)	Impacts of Proposed Action (Operation/Maintenance)	Impacts of Alternatives
WETLANDS AND VEGETATION Generation plant: Permanent conversion of approx. 1 acre of wetland vegetation and 3 acres of irrigation pond to native upland habitat. Permanent conversion of 125 acres of cropland, 20 acres of disturbed shrub-steppe, and abandoned orchard to industrial facilities or grass/shrub. Plant access roads: Temporary disturbance of 2 acres of disturbed shrub-steppe for construction access road from U.S. Highway 12 to plant site. Permanent conversion of 10 acres of existing irrigated cropland and 2 acres of native shrub/grasses for placement of county access road (5 additional acres would be disturbed during construction but returned to cropland or native habitat). Water/gas pipelines: Temporary impact on 4.5 acres of disturbed shrub-steppe and 22 acres of poplar stands for water pipeline. Temporary disturbance of 59 acres of shrub-steppe, poplar stands, and existing utility corridor for gas pipeline. Transmission line: Approx. 34 acres cleared for new or improved access roads. Temporary disturbance of 41 acres for tower installation, with 8.4 acres permanently converted. Approx. 17.6 acres temporarily disturbed during conductor placement. Approx. 7 acres of farm and shrub-steppe permanently removed for Smiths Harbor Switchyard. Line would traverse 35 to 37 acres of potential wetland.		
	<p>Indirect impacts on wetlands as a result of stopping irrigation on project site.</p> <p>Temporary clearing or trampling of vegetation possible during maintenance.</p>	<p>Alternative Transmission Structure and Longer Span Design: Potential reduction of impacts because approx. 17 fewer towers would be constructed.</p> <p>Alternative Alignment near McNary Substation: Alternative route east of existing Lower Monumental line could disturb a wetland with one tower location.</p> <p>No Action Alternative: No impacts.</p>

Impacts of Proposed Action (Construction)	Impacts of Proposed Action (Operation/Maintenance)	Impacts of Alternatives
AGRICULTURAL CROPS AND LIVESTOCK		
<p>Generation plant: Permanent conversion of 78 acres of agricultural cropland (currently alfalfa) to industrial facilities, representing a small percentage of available cropland in Walla Walla County.</p> <p>Water/gas pipelines: Temporary impact on 24 acres of fiber farm, 3 acres of farmland, and 20 acres of vacant land during water supply pipeline construction. Temporary disturbance to cottonwood plantation and 12 crop circles during construction of natural gas pipeline.</p> <p>Transmission line: Temporary disturbance of 6.8 and 3.8 acres of nonirrigated and irrigated crops, respectively, during placement of towers. Permanent disturbance to agricultural land (1.4 acres of nonirrigated and 0.8 acre of irrigated land). Another 4.5 acres temporarily disturbed at pulling and reeling sites. Smiths Harbor Switchyard would permanently remove up to 7 acres of irrigated agriculture land from production.</p>	<p>Approx. 1,700 acres of cottonwood plantation and irrigated cropland would be purchased or leased as part of water rights acquisitions for the plant. Use of this land for irrigated agriculture would be converted to dryland grasses/shrubs, fallow land, or grazing land for the life of the project.</p>	<p>Alternative Transmission Structure and Longer Span Design: Slight reduction in acreage of agricultural land permanently impacted because fewer transmission towers would be built.</p> <p>Alternative Alignment near McNary Substation: Amount of pasture land disturbed would be similar for both alignments.</p> <p>No Action Alternative: No impacts.</p>
WILDLIFE		
<p>Temporary and permanent loss of wildlife habitat and displacement of wildlife species during construction of project facilities.</p> <p>Potential localized impacts on Ord's kangaroo rats during construction of plant access road and water pipeline.</p> <p>Noise and visual disturbance during construction could impact wildlife. Potential mortality of nestlings if clearing occurs during nesting season.</p>	<p>Potential bird collisions with HRSG stacks and transmission lines.</p> <p>Noise and visual impacts on wildlife during maintenance activities.</p>	<p>Alternative Transmission Structure and Longer Span Design: Use of fewer, taller transmission towers would reduce ground-level habitat impacts (less acreage would be impacted).</p> <p>Alternative Alignment near McNary Substation: Alternative approach could impact wetland/riparian habitat at one tower location.</p> <p>No Action Alternative: No impact. No enhancement of habitats along Walla Walla River through riparian vegetation replanting associated with the project.</p>
FISHERIES		
<p>Permanent dewatering of pond A would remove the pond as fish habitat but prevent future mortality of fish that currently enter through unscreened pump intakes.</p> <p>Installation of large culvert and associated fill would be needed at the unnamed stream east of Highway 207.</p>	<p>Potential instream flow benefit to Walla Walla and Columbia Rivers because of reduction in actual water withdrawals compared to current levels.</p>	<p>Alternative Transmission Structure and Longer Span Design: Impacts similar if not slightly less than proposal because of reduced erosion potential.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>

Impacts of Proposed Action (Construction)	Impacts of Proposed Action (Operation/Maintenance)	Impacts of Alternatives
ENERGY AND NATURAL RESOURCES		
Materials consumed: Diesel fuel: 520,000 gallons (total) Gasoline: 130,000 gallons (total) Electricity: 14,300 megawatt hours (MWh) per week Water: 5,000 gpd (average); 45,000 gpd (maximum) Aggregate: 14,000 tons (total) No impact on local, regional, or national availability of material expected.	Materials consumed: Diesel fuel: 12,000 gallons per year Gasoline: 4,800 gallons per year Water: 4,087 gpm (maximum); 3,171 gpm (average) Natural gas: 157.9 million cf/day (average) No impact on local, regional, or national availability of material expected.	Alternative Transmission Structure and Longer Span Design: No difference in impacts compared to proposed action. Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action. No Action Alternative: No consumption of resources or generation of electricity to meet demand. New energy facilities would likely be built at another location.
NOISE		
Construction activities would temporarily increase noise levels in area (but would seldom exceed ambient background noise levels at the residence nearest the power plant). Potential temporary loud noise during steam cleaning of piping systems. Use of a helicopter and potential daytime blasting to erect transmission towers would create temporary noise impacts at homes and businesses near tower locations.	Sound levels during operation would be audible, but below required nighttime levels.	Alternative Transmission Structure and Longer Span Design: No difference in impacts compared to proposed action. Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action. No Action Alternative: No impacts.
LAND AND SHORELINE USE		
The proposed power plant may conflict with existing residential uses immediately northwest of the project site. Construction noise may be audible at recreation areas. Potential for short-term loss of access at fishing areas at Wallula Habitat Management Unit on Walla Walla River. Project would be consistent with land use plans and policies. Permanent conversion of 78 acres of agricultural land into industrial facilities. Permanent removal of acreage along transmission line right-of-way as a result of tower placement and construction of access and spur roads.	Project could indirectly increase attractiveness of industrial land in the area for development. Potential for discouragement of recreational use at Wallula Habitat Management Unit and Wanaket Wildlife Area if transmission line towers are needed in these areas.	Alternative Transmission Structure and Longer Span Design: Slightly less acreage would be impacted compared to proposal. Alternative Alignment near McNary Substation: Alternative would have greater potential to affect future commercial development and traffic improvements. No Action Alternative: No impacts.

Impacts of Proposed Action (Construction)	Impacts of Proposed Action (Operation/Maintenance)	Impacts of Alternatives
VISUAL RESOURCES/LIGHT AND GLARE		
Presence of heavy equipment and construction lighting would temporarily reduce quality of visual environment, resulting in low to moderate overall visual impacts.	<p>Low to moderate visual and light/glare impacts expected, lessening at the generation plant site as landscaping and vegetative screening mature.</p> <p>Periodic visibility of plumes from cooling tower and turbine.</p>	<p>Alternative Transmission Structure and Longer Span Design: Visual impacts slightly higher where taller structures would be used.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>
POPULATION, HOUSING, AND ECONOMICS		
<p>Local construction industry appears large enough to supply all or most of the labor needed for the project. Impacts on housing not expected.</p> <p>Plant construction would generate approx. \$40.1 million in sales tax revenues for all jurisdictions over 2 years, with minor increase in service costs to local governments (e.g., law enforcement, fire protection, road maintenance).</p>	Long-term net fiscal surplus would probably result for all jurisdictions receiving tax revenue from the project.	<p>Alternative Transmission Structure and Longer Span Design: No difference in impacts compared to proposed action.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>
PUBLIC SERVICES AND UTILITIES		
<p>Increased pressure on local fire fighting capacity (specifically Walla Walla County Fire Protection District 5).</p> <p>Slight increase in need for law enforcement or emergency medical services.</p>	None.	<p>Alternative Transmission Structure and Longer Span Design: No difference in impacts compared to proposed action.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>
CULTURAL RESOURCES		
Ground-disturbing activities associated with project construction could impact undiscovered cultural resources.	None.	<p>Alternative Transmission Structure and Longer Span Design: Potential reduction in impacts by providing flexibility for tower placement (thus avoiding sensitive resources) and because fewer miles of access roads and spurs would be required.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>

Impacts of Proposed Action (Construction)	Impacts of Proposed Action (Operation/Maintenance)	Impacts of Alternatives
TRANSPORTATION		
Potential increase in traffic resulting from construction workforce and transfer of project-related materials and equipment.	Possible construction of an off-highway road network would encourage future industrial development.	<p>Alternative Transmission Structure and Longer Span Design: No difference in impacts compared to proposed action.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>
HEALTH AND SAFETY		
<p>Risk of fire or explosion during construction is considered low.</p> <p>Small quantities of biodegradable fuel, oil, or grease may leak from construction equipment. Potential for spill from service or refueling trucks.</p> <p>Chemical cleaning of plant equipment would require use of hazardous materials.</p> <p>Some hazardous wastes would be produced.</p> <p>Natural gas pipeline crossing of existing Chevron Products pipeline would present risk of fire or explosion if existing pipe were accidentally damaged.</p>	<p>Potential fire or explosion of natural gas at the plant. Natural gas would not be stored on-site. Regulations and safety procedures would be followed.</p> <p>Potential release of hazardous materials to the environment. Release of ammonia is the most likely chemical release accident with potential for off-site impacts. Aqueous ammonia would be used to reduce potential severity of any accident.</p> <p>Generation of hazardous waste materials such as paints and lubricants.</p> <p>Transmission lines would produce electric and magnetic fields (EMF), exposure to which may cause possible health effects. The project would meet Bonneville's electric field strength standards.</p> <p>Potential for brush fires near transmission lines.</p>	<p>Alternative Transmission Structure and Longer Span Design: Taller transmission towers could reduce EMF field strengths at ground level.</p> <p>Alternative Alignment near McNary Substation: No difference in impacts compared to proposed action.</p> <p>No Action Alternative: No impacts.</p>

1.7 Cumulative Impacts

The West Coast has short-term and long-term supply needs for electric power. Recent long-term planning estimates by the Pacific Northwest Electric Power and Conservation Planning Council show the region will need an additional 6,000 MW of electricity over the next 10 years. Other estimates run as high as 8,000 MW. This demand for electric power has led to a number of new generating resources being proposed to meet the regional energy need. More than 24,000 MW of resources have been proposed by a variety of independent power projects. These proposals far exceed the need, which makes it difficult, if not impossible, to determine which specific projects will ultimately be constructed and operated.

Although the environmental impacts of proposed power projects are currently evaluated on an individual basis, the recent abundance of project applications has prompted EFSEC and Bonneville to consider potential cumulative effects. While the high number of power plant proposals would address regional energy shortage concerns, the cumulative impacts of constructing several energy facilities in the Pacific Northwest must be considered. This concern is magnified when several projects are proposed in close proximity to each other and/or with similar schedules (such as the Starbuck, Wallula, and Mercer Ranch projects in southeastern Washington, or the multiple projects existing or proposed in Umatilla County, Oregon).

Following is a summary of the cumulative impacts evaluation included in the Wallula Power Project EIS.

1.7.1 Global Warming

Most worldwide greenhouse gas emissions are in the form of CO₂, while a smaller fraction of the emissions are in the form of other gases such as methane or nitrous oxide. The total annual greenhouse gas emissions associated with the Wallula Power Project (including fugitive leaks of natural gas from the pipeline system serving the plant) would be 4.8% of the greenhouse gas presently emitted from all sources in Washington State and 9.6% of the amount anticipated to be issued from all proposed future power plants in the Northwest. The greenhouse gas emissions from the Wallula Power Project would be approximately 0.06% of the United States emissions. The actual effect on global warming caused solely by emissions from the Wallula plant is unknown.

1.7.2 Regional Air Quality

Air quality at many of the region's Class I areas (typically wilderness and national parks) is acknowledged to be currently impaired due to regional population growth and industrial activity. Since the majority of the proposed power projects are combustion turbines that would be operated near Class I areas, there is a regional concern over further degradation of air quality.

Increases in ambient concentrations of sulfur dioxide (SO₂), nitrogen oxides (NO_x), and particulate matter (PM₁₀) caused solely by new power plants were modeled to be much lower than the allowable Prevention of Significant Deterioration (PSD) Class I increments, and in nearly all cases were below Significant Impact Levels. Even for the worst-case scenario, new power plants in the region would probably not cause concentrations exceeding regulatory limits at any Class I area.

In most of the Class I areas the existing background acid deposition rates are much higher than impact thresholds established by the U.S. Forest Service and the National Park Service, indicating that existing air quality is already significantly impaired. The modeled worst-case increases caused solely by new power plants would be a small fraction of the existing background values.

Operation of between 28 to 45 new power plants in the region could significantly impact regional haze at many Class I areas. However, it is expected that only a fraction of those power plants would actually be constructed.

1.7.3 Water

Many existing and proposed plants in Washington and Oregon consume, or plan to consume, water from the Columbia River (through direct withdrawals or through aquifers that recharge the river). While it is unlikely that all of these plants will be constructed, the fact that so many have been proposed along the Columbia River indicates that cumulative impacts may occur.

The average daily flow from the Bonneville Dam is 2,609 million gallons per day (mgd). Thus the maximum total daily water consumption of all existing, permitted, and proposed plants above the Bonneville Dam (50.0 mgd) represents approximately 1.9% of the Columbia River's daily flow at that point. This does not take into account localized water supply impacts along specific river reaches, where concentrated water withdrawals could result in more pronounced water resource effects.

1.7.4 Natural Gas Supply

Using conservatively high estimates, the need for natural gas for power plants in the region would be approximately 1.58 billion cubic feet per day (cf/day). This represents approximately 53% of Canada's delivery capacity of 3 billion cf/day. Future natural gas needs would potentially exceed current Canadian supply capacity by approximately 6%.

1.7.5 Transmission Lines and Natural Gas Pipelines

Cumulative impacts related to transmission lines could occur where multiple new lines would converge on the same substation. For example, several new lines (including the McNary-John Day Project, new lines from the Umatilla Generation Project and the Wanapa Generation Project, a 230 kV line to Brownlee, and an additional McNary-John

Day line on the south side of the Columbia River) are all proposed to interconnect at the McNary Substation. If all projects were to be built, transmission line congestion around the McNary Substation could worsen.

Land uses can be directly affected by the amount of new and existing rights-of-way needed to establish transmission line corridors. Constructing new transmission lines (and widening existing rights-of-way) can affect residential, commercial, agricultural, and forest land because new line segments and access roads intrude on existing land uses and can eliminate some land uses.

Removal of vegetation to create and maintain transmission line rights-of-way could gradually alter the composition of vegetation (particularly in forested areas where tall trees must be removed). Maintenance such as herbicide use and the clearing of tall trees would leave only low-growing vegetation. Reseeding right-of-way construction corridors with native vegetation has met with mixed success.

Creating and maintaining transmission line rights-of-way could also negatively affect wildlife. Construction-related impacts such as noise and vegetation clearing could impact local wildlife species, particularly during breeding, calving, and other critical seasons. Operation impacts could also include bird strikes on towers or other tall structures at night or in foggy weather. Maintaining rights-of-way also increases access for hunters, and could result in habitat fragmentation.

Impacts associated with natural gas transmission line routes would be similar (though slightly less intensive) than those associated with transmission line impacts.

1.7.6 Transportation

If two or more large projects were constructed in close proximity and on similar schedules (such as the Wallula and Starbuck Power Projects), construction workers commuting to both project sites could contribute to added congestion on the same local streets and highways. Planned transportation improvement projects could also reduce capacity on local roads, making the burden of additional commuter traffic difficult to absorb.

1.7.7 Population and Housing

The workforce analysis conducted for the Wallula Power Project suggests that there is a sufficient labor supply available to complete both the Wallula and Starbuck Power Projects within the same time frame. If an additional project (or projects) were to be constructed simultaneously (i.e., Mercer Ranch, other transmission lines, etc.), the local workforce supply might be strained. This would likely require more workers from outside of the project area to relocate to the project vicinity, thus potentially affecting local population and housing.

1.7.8 Cultural Resources

Constructing power project components such as generation plants, water pipelines, natural gas pipelines, electrical transmission lines, and so forth requires the disturbance of earth to create foundations, trenches, rights-of-way, and staging areas. Every time native soil is disturbed for these activities, the likelihood increases that cultural resources will be uncovered.

Power project operation could also impact cultural resources. Water withdrawal from reservoirs behind dams could reveal sensitive historic tribal areas, and discharge of warm wastewater could threaten the integrity of cultural resources. Cumulative air quality degradation from power plant emissions and other sources could lead to acid deposition, resulting in corrosion of historic structures and resources (e.g., the corrosion of petroglyphs in the Columbia River Gorge).

1.8 Issues to be Resolved

Although most of the issues associated with this proposal have been clearly identified and assessed, or will be addressed in some clearly identified action plan in the future, there are some that have not been totally resolved or that may require further analysis or future decisions. This section summarizes those issues, consistent with NEPA and SEPA.

Water Rights – Although the applicant has a clearly described plan to acquire water rights sufficient to operate the facility, it involves acquisition and transfer of rights from various sources. These purchases and transfers have not yet occurred. If they occur and are approved as described within this Draft EIS, this will no longer be an issue. This EIS does not attempt to make an independent legal review of this water rights issue.

Prevention of Significant Deterioration (PSD) permit and Best Available Control Technology (BACT) – Final emissions and control technologies to be used for air emissions await decisions and analysis to be made by EFSEC and EPA. This is expected to be a routine and minor issue because there is no indication to expect that final permit requirements would change significantly from the emissions discussed within.

PM10 Offsets – Under the requirement to offset at least 303 tons per year of particulates, the applicant proposes to purchase or lease up to 1,300 acres of active farmland and convert it to cultivated dryland grasses or dryland grasses and shrubs. Based upon the qualified acreage of active farmland currently available in the market for lease or purchase, the applicant has options on sufficient agricultural land to generate emission reduction credits (ERCs) for PM10 equal to the project's total PM10 emissions. However, neither EFSEC nor EPA has accepted the applicant's proposal for Lowest Achievable Emission Rate (LAER) or ERCs, and it is not certain that EPA will accept the use of agricultural crop reductions as offsets for the Wallula Power Project's stack emissions. If EPA rejected the applicant's LAER and ERC proposal, then the applicant would have to obtain other offsets before it could receive an air quality permit.

Access Road – This Draft EIS discusses two access road options: one proposed by the applicant and one proposed by WSDOT and agreed to in concept by the authors of this EIS. This alternative issue will need to be resolved before publishing the Final EIS.